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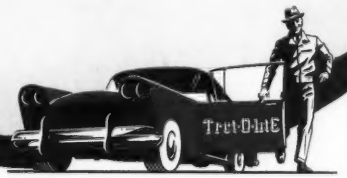

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A Case For Higher Crude Prices

By STARK FOX, Executive Vice President
Oil Producers Agency of California

In California oil industry history, when surpluses have developed, both product and crude prices have gone down. A reduced supply followed, to be followed in turn by the regaining of a reasonable balance between supply and demand.

Conversely, when either because of an increase in demand or a reduction in supply, or both, demand became greater than supply, both product and crude prices have gone up. This has resulted in increased supply and again, the regaining of a reasonable balance between supply and demand.

The most recent occurrence of the first of these broad economic movements was during the years 1955 and 1956 in residual fuel and heavy crude. At the end of 1955, residual fuel stocks were low—approximately 12,000,000 barrels—and demand was relatively high. As a consequence both residual fuel and heavy crude posted prices increased during 1956-57 and, in relation to demand, residual fuel supply increased 33,000 b/d.

This led to a surplus, and during 1958-59, residual fuel and heavy crude prices were cut; supply in relation to demand decreased, and surpluses began to disappear.

By the end of 1959, residual fuel stocks were 11,573,000 barrels less than at their high point in October, 1958. Residual supply had dropped to a level 32,000 b/d below demand.

At the end of the first six months of 1960, residual stocks had dropped a further 9,600,000 barrels, making them some 20,000,000 barrels less than at their high point of October, 1958. Residual supply was 53,000 b/d less than demand during the six-month period.

Thus, during 1959 and to date in 1960, the other cycle of the supply and demand relationship has developed: supply has become less than demand. The result to be expected is for prices to increase in order to bring out additional supply.

Why has this normal development failed to occur?

A study of trends of the past five years and of current conditions in the industry does not reveal the answer.

1955-59 Inventories and Prices

At the beginning of 1955, residual fuel stocks were 29,510,000 barrels. Uninterrupted monthly decreases followed until the low point was reached: 10,839,000 barrels on March 31, 1956.

During the summer months of 1956, the normal seasonal build-up in inventories took place (to 15,835,000 barrels on September 30), then stocks dropped to 11,114,000

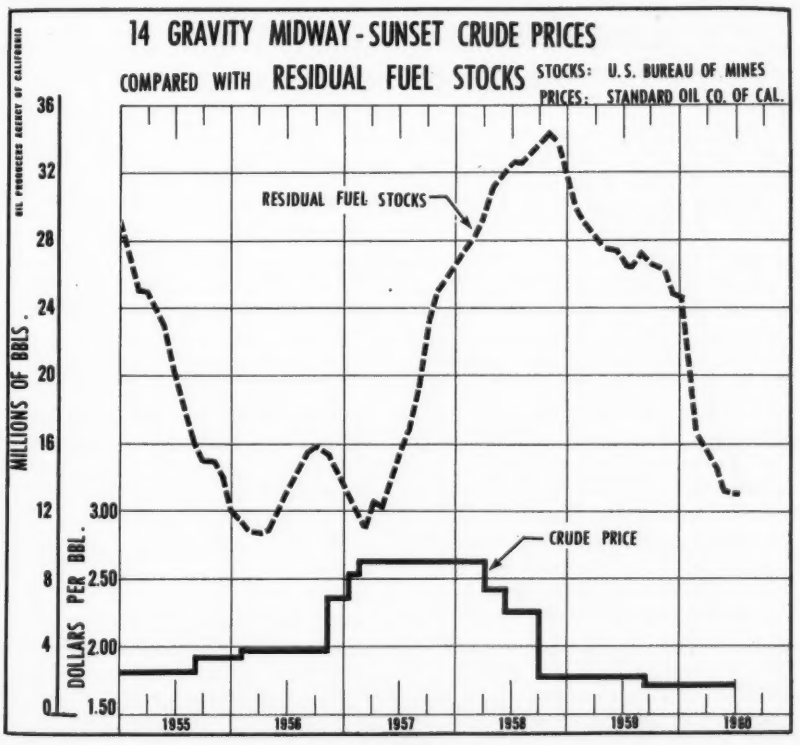


CHART 1

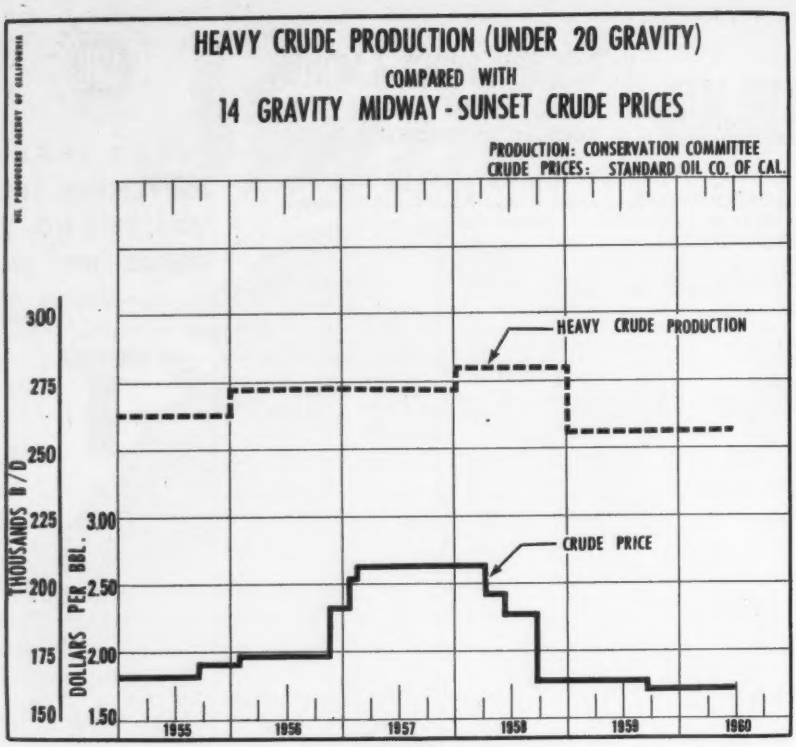


CHART 2

on February 28, 1957, only to begin an uninterrupted climb to the October 31, 1958 peak of 34,272,000 barrels.

From that point, a consistent drop again began, with stocks decreasing to 22,699,000 barrels on December 31, 1959, and further decreasing to 13,100,000 on June 30, 1960.

Prices of heavy crude, keyed to the residual fuel supply-demand pattern by the principal marketing companies in District V, responded to stock changes during 1955-57 in a predictable manner.

As residual stocks dropped—as supply in relation to demand decreased—posted prices for heavy crudes increased. They went from $1.83 (for 14 gravity Midway-Sunset crude) at the end of 1954 to $1.93 per barrel at the end of 1955, and in a series of increases in 1956 and 1957 to $2.63 in the latter year.

These postings held until April of 1958, but with a constant increase in residual fuel inventories, heavy crude prices dropped during the rest of that year to $1.77 at the year-end and further to $1.72 during 1959. This posting has prevailed ever since.

Chart 1 plots residual inventories and posted prices for 14° Midway-Sunset crude from 1955 to June 30, 1960. Examination of the chart shows that, making allowance for a reasonable time lag, heavy crude prices were strongly influenced on the upside in 1955-57 by low residual inventories and on the downside during 1958-59 by high residual inventories.

The inventory position at June 30, 1960, and the 1959-60 trends leading to that position, strongly resemble the 1955 trend.

These trends in 1955 resulted in increased prices for heavy crudes. The reason for the increase is fundamental in a competitive economy: price increases occurred because additional supply was needed.

1955-59 Heavy Crude Prices, Production

The predictable result followed.

In 1955, production of crude of under 20 gravity started the year at 263,500 b/d. During the year, the posted price of 14 gravity Midway-Sunset crude, a representative heavy oil, was increased by 10¢ per barrel. Production of heavy crude increased 10,000 b/d during the year, to 273,000 b/d at the start of 1956. During that year and 1957, a series of increases totalling 70¢ per barrel brought the price of 14 gravity crude to $2.63, and production of crude under 20 gravity to 279,500 b/d at the beginning of 1958.

Price increases of 80¢ per barrel over a three-year period led to a production increase of 16,000 b/d in the same period.

Conversely, price cuts in 1958 and 1959 led to a substantial drop in production.

Beginning early in 1958, a series of price cuts lopped 86¢ per barrel off the postings for 14 gravity Midway-Sunset crude in that year, and a further cut in 1959 brought the posted price to $1.72 per barrel, 91¢ below the level of less than eighteen months earlier.

Production of heavy crude dropped. Production of crude of under 20 gravity was 279,500 b/d in January, 1958; it was only 257,900 b/d in January, 1960, a drop of 21,600 b/d in the two years.

Chart 2 shows the relationship of heavy crude prices to heavy crude production. It clearly points out that as heavy crude prices increase, so does production. As prices drop, so does production.

Bunker C Prices vs. Heavy Crude Prices

In the California industry, heavy crude prices are linked to the price of Bunker C fuel oil. This has been true when residual fuel supply has been excessive in relation to demand and inventories have piled up. Prices have been cut. When the reverse has been true, as in 1956 and 1957 when inventories dropped and increased supplies were needed, prices have risen.

Today's postings appear to be abnormal.

A comparison of the current posted price for Bunker C fuel at San Pedro with that for 14 gravity Midway-Sunset crude shows that the present differential—14 gravity crude posting at 38 cents below Bunker C posting—is the widest spread between the two postings at any time during the five years 1955-1959.

The next widest spread—33 cents—prevailed during the last three months of 1958 and the first eight months of 1959. Prior to that time, there was a seven-month period in 1957 when the spread was 32 cents and a nine-month period in 1956 when it was 22 cents.

During most of 1955, 14 gravity Midway-Sunset crude was actually

at a premium of three cents over the posted price of Bunker C fuel.

In relation to prices for Bunker C fuel, 14 gravity crude prices have dropped 41 cents per barrel since 1955, and are at the greatest discount of recent years.

Further, the drop in Bunker C posted prices has been less than the drop in heavy crude prices. The current posting for the fuel, $2.10 per barrel, is 85¢ below its recent high—$2.95 during a seven-month period in 1957.

The current posting for 14 gravity Midway-Sunset crude, $1.72 per barrel, is 91¢ below its recent high—$2.63 during 14 months in 1957-58. These comparisons are shown in Chart 3.

Residual Fuel Manufacture vs. Demand

It has been generally recognized in the industry that domestic demand for residual fuel has been declining during the past several years. The term "domestic demand" includes all demand for the fuel within, but none outside, the Pacific Coast states (District V). It includes military demand, for example, but excludes offshore shipments to foreign countries or to the Atlantic Coast, and even excludes incidental shipments by rail or truck to neighboring states.

Domestic demand, therefore, is basic demand. Offshore shipments, on the other hand, particularly those to Atlantic Coast and foreign destinations, are erratic and are governed almost entirely by inventory levels. When inventories become high, Atlantic shipments increase; when they are low, Atlantic shipments decrease to the point of virtual disappearance.

While the declining trend in domestic demand for residual fuel is common knowledge, the fact that residual fuel manufacture by District V refineries has decreased at an even faster rate may not be so well known. The result is that there has been a net decrease in supply in relation to domestic demand.

In 1955, domestic demand for residual fuel was 305,000 b/d; manufacture was 363,000 b/d. Manufacture therefore exceeded domestic demand by 58,000 b/d.

In 1959, domestic demand for residual fuel was 239,000 b/d; manufacture was 283,000 b/d. Manufacture therefore exceeded domestic demand by only 44,000 b/d.

In the first six months of 1960, domestic demand for residual fuel was 280,000 b/d; manufacture was 279,000 b/d. **Domestic demand** therefore **exceeded manufacture** by 1,000 b/d.

Put another way, domestic demand for residual fuel declined 66,000 b/d during the years 1955-59; manufacture, however, decreased 80,000 b/d. The net decrease in supply in relation to domestic demand was, therefore, 14,000 b/d.

In each of the three months of December 1959, and January and February, 1960, domestic demand for residual fuel exceeded its manufacture. In no other months of the years 1955-59 did this occur.

It appears that this experience will be repeated during the coming winter months of 1960-61. In the first six months of 1960, domestic demand for residual fuel was approximately 20% higher than in the corresponding months of 1959; that rate of increase, if maintained, will result in an average domestic demand of approximately 395,000 b/d during the November-February period of 1960-61.

It is highly unlikely that refinery manufacture will exceed 285,000 b/d at the most, hence stock withdrawals on the order of 100,000 b/d can be expected during those months.

In addition to domestic demand, there is, however, some 30-40,000 b/d of demand to Pacific foreign destinations which is nearly constant. If only 30,000 b/d of this demand be added to domestic demand, the manufacturing surplus as of 1959 becomes only 14,000 b/d, and the deficit in the first six months of 1960 becomes 15,000 b/d.

The significance of these figures is that they show a deficit in manufacture in relation to **domestic**, not total, demand for residual fuel. The entire effect upon total demand of distress shipments is eliminated. In fact, with manufacture-domestic demand relationships as they are, there is no need nor room for distress shipments with their usually depressing effect upon residual fuel prices.

The decrease in residual fuel manufacture is largely attributable to two developments: installation of additional cracking and coking facilities in District V refineries and the greater volume of light crude in relation to heavy crude charged to refineries.

The compounding effect of refinery utilization of increasing quan-

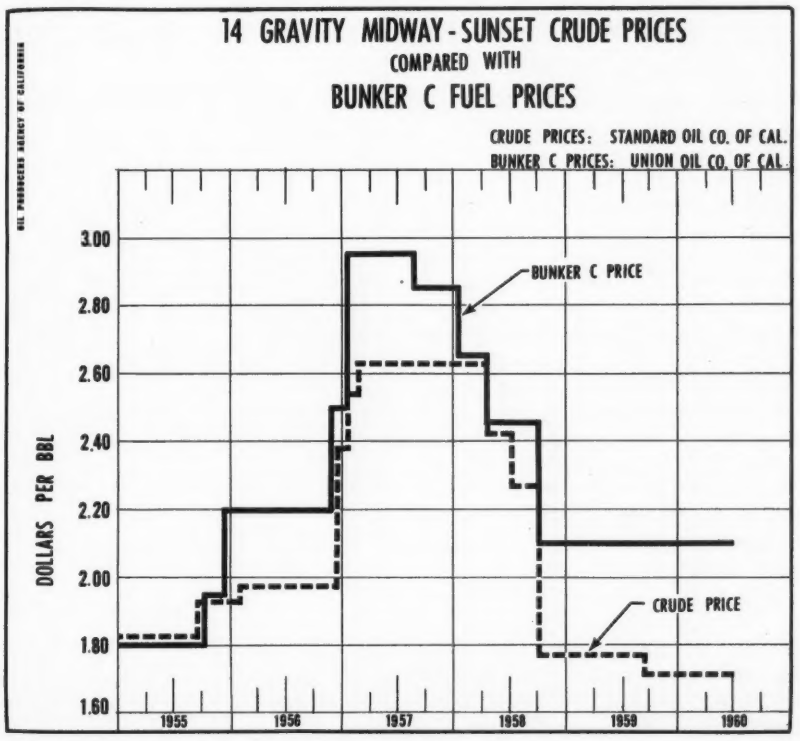


CHART 3

tities of light crude, much of it imported, and decreasing quantities of heavy crude as California production has declined, together with refinery changes, has resulted in a substantial decrease in yields of residual fuel.

Chart 4 compares residual manufacture with domestic and total demand.

Bonded Bunker C Imports

It appears that the present and forecast future deficit in residual fuel supply has resulted in a completely new development in District V—the importation of Bunker C fuel oil in bond for ships in international trade.

A recent issue of an oil trade publication reported that two, and possibly three, companies are importing this fuel in order to balance Bunker C fuel supply-demand relationships.

The article further said that this is the first time that such action has been taken on the West Coast.

Under the present import regulations, there is no restriction upon the importation of Bunker C fuel in bond for use by ships in foreign trade.

The fact, however, that two and possibly three companies are for the first time importing fuel oil into the Pacific Coast in order to balance supply-demand underscores the complete reversal in the heavy fuel and crude situation that has occurred since the end of 1957.

From an unwieldy surplus, which resulted in drastic price cuts and distress shipments to the Atlantic Coast and even to Atlantic foreign destinations, District V heavy fuel supply—the principal source of which is heavy California crude—is now being augmented by imported fuel.

California Prices vs. Other Prices

In any consideration of prices, competitive relationships must be taken into account. Such an accounting shows that prices for both heavy crudes and Bunker C fuel in California are among the lowest, both domestic and foreign.

A schedule of world-wide crude prices shows that postings for heavy California crude are lower than postings in any other producing area, domestic or foreign, except two. These are Venezuela, where the posted price of heavy crude is near $1.70 per barrel against the $1.72 of 14 gravity Midway-Sunset crude, and the Neutral Zone, where heavy crudes appear to be about $1.00 per barrel.

In the United States outside California, heavy crude prices are on the order of $2.00 per barrel. Many postings do not go below 20 gravity (most of these prices are somewhat higher than postings for 20 gravity California crudes), but an extension to 14 gravity at the universal differential of two cents per degree results in a low of $1.97 per barrel, 25 cents higher than California postings.

A comparable situation exists as to Bunker C Fuel. Its posted price at San Pedro is $2.10 per barrel, which compares with a reported $2.00-$2.10 in the Caribbean, $2.30-$2.35 on the Gulf Coast, and $2.52 in New York Harbor.

These comparative prices, for crude and for fuel, clearly indicate that in neither commodity is California overpriced. On the contrary, available published information shows that California posted prices are among the world's lowest.

The Case for Higher Crude Prices

In the two and one-half years since 1957:

Heavy fuel inventories have dropped 13,721,000 barrels;

Heavy crude production has dropped 21,600 b/d;

Posted prices for a representative heavy crude have dropped 91¢ per barrel;

This posting is at the greatest discount under Bunker C postings of any time during the years 1955-59;

Net heavy fuel supply in relation to domestic demand has dropped 14,000 b/d;

The supply of heavy fuel is so low that certain companies are, for the first time, importing Bunker C fuel into District V;

California posted prices for heavy crude and Bunker C fuel are among the world's lowest.

The facts demonstrate that an additional supply of heavy fuel is needed. Experience in the California industry proves that as prices increase, so does production.

The economic factors all point to the restoration of some part, at least, of the drastic cuts that occurred in 1958-59. An increase of as much as 91¢ per barrel would merely restore, not increase, 1957 price levels.

In a larger sense, restoration of

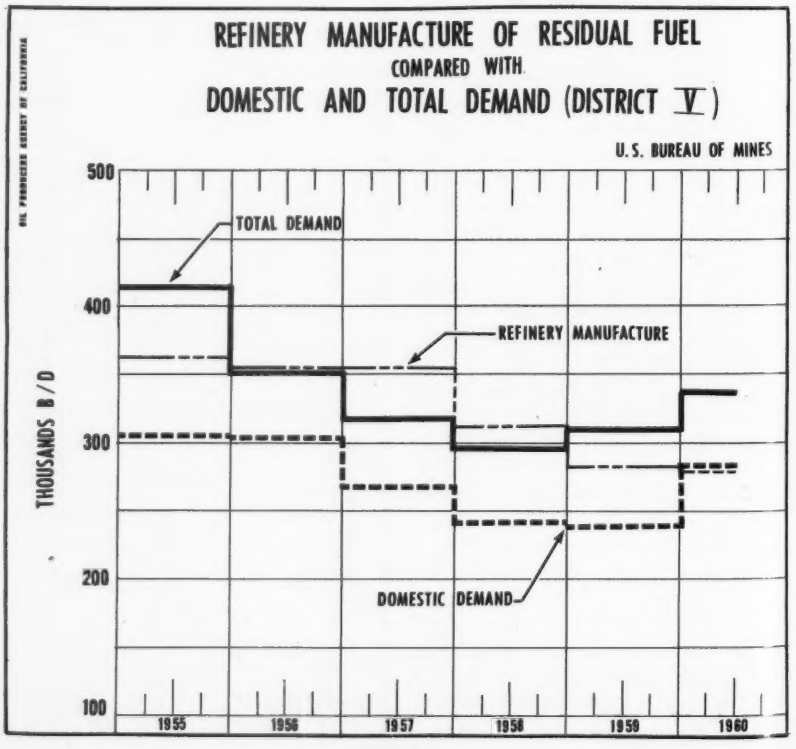


CHART 4

those cuts is called for to prevent further deterioration in the California industry, in the interests of national security. This is Federal policy. It is the reason for the oil import program. It emphasizes the need for the normal, expectable, and reasonable response to economic factors. That response is an upward adjustment in California crude prices.

Statement by Alvin C. Hope, President, Independent Petroleum Association of America

Strengthening of the crude oil market, as evidenced by The Ohio Oil Company's 15-cent per barrel increase in its posting for Illinois Basin crude, is encouraging and should be gratifying to producers who have been victims of serious price depression in the facing of continuously rising costs.

The action by Ohio, in restoring the price it will pay for Illinois Basin crude to $3.00 per barrel, follows similar actions in other areas which have been affected by price deterioration. In Kansas, for example, earlier price cuts of 7 to 20 cents per barrel have been restored recently.

These trends represent steps toward correction of uneconomic price conditions which have worsened since 1957, in spite of continuously rising labor and materials costs which producers have experienced in this period. The nature of the problem was revealed in a U. S. Bureau of Mines report, released recently, showing that "the (oil) industry's present replacement cost per barrel of crude oil is $3.38." This contrasts with an average U. S. crude oil price of only $3.00 per barrel.

J. H. Graham Heads New Baker Branch In Rio Vista, Calif.

Baker Oil Tools, Inc. has announced the expansion of its California sales and service facilities with the opening of a new branch in Rio Vista.

J. H. Graham has been made Sales and Service Engineer in charge of this new branch. He has been a member of the Baker organization for over six years and has gained valuable practical experience in California oil field conditions and practices through his work in the Coalinga area.

Jade Oil Acquires Texas Properties

The Jade Oil Company of Beverly Hills, California, has acquired all the assets of Oil Operations, Inc. of Galveston, Texas, in exchange for 135,342 shares of Jade common stock, it was announced Sept. 1 by Johnny Mitchell, Jade president.

Oil Operations, Inc. has 21 producing wells located in Ft. Bend, Liberty, and Jefferson counties, Texas. These wells are currently producing in excess of 6,000 barrels of oil per month. The company also has 12 proven undrilled locations.

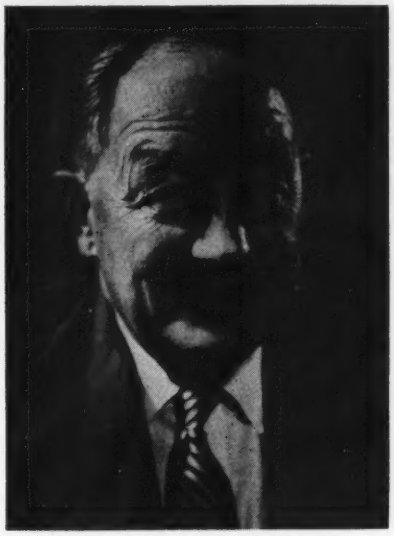
Jade has acquired in the producing wells more than 700,000 barrels of oil, Mitchell stated. In addition, there are an estimated 400,000 barrels in the proven undrilled locations, he added.

Texaco Gas Well Flows Oil

A small gas well completed last year by Texaco Inc. in the Winters Gas Field, Solano County, Calif. has turned out to be an oil well. Texaco said its well, the McCune No. 1, was drilled to a total depth of 6,000 feet and completed in September 1959 as a gas well from two perforated intervals. The well was shut in until pipeline connections were made early in April. When the hookup was made, the gas well began to produce oil. The well is believed to be the first of its type in the Sacramento Valley.

The company said the importance and extent of this oil discovery cannot be determined until further drilling has been done.

FOUR RABBIT'S FEET are better than one figures A. E. Patton (l.), Richfield Oil Corporation traffic manager. That's what he brought for Donald H. Martin (c.), transport driver who recorded 13 years and 1,000,000 of accident-free miles. Company awards were engraved gold wrist watch and gold buckle presented by J. T. Foster, marketing general sales manager. Gavel is for knocking on wood. Martin operates out of Richfield's Colton, Calif. terminal.



Edwin W. Pauley

Pauley Enters Gasoline Marketing Field

A familiar name in the oil business will again be identified with gasoline filling stations in the West, as Edwin W. Pauley announced plans for a chain of company owned stations to be operated by Pauley Stations, Inc., recently formed subsidiary of Pauley Petroleum Inc.

The move into marketing and distribution, Pauley said, brings the company to the status of an integrated independent.

Joe W. Perry, formerly with Hancock in California and Tidewater in New York, who came with Pauley early this year to head market research, has been made executive vice-president of the subsidiary company in charge of the station operation. Other officers are: Mr. Pauley; William R. Pagen and Claude Cameron, both of whom are vice-presidents of Pauley Petroleum Inc.; and Orris R. Hedges, chief counsel.

Stations of the "Atascadero" design will be built at the rate of one each 10 days, according to present plans.

Trade name for the new gasoline will be Pauley Blend.

Each station will represent an average investment of about $75,000 for land and improvements.

By RICHARD SNEDDON

Storage Hazards

One of the petroleum industry's first major problems was to contain the brownish black fluid that welled in ever increasing quantity from freshly discovered underground reservoirs. Earth dikes and shallow excavations, hastily improvised, helped initially to keep the stuff impounded to some extent. But these were not enough! Porous dirt and rocks soaked up the oil in discouraging quantity and, being both volatile and inflammable it could not only catch fire, but under certain conditions its released vapors could be ignited at a considerable distance from their point of origin, and could then flash back and set the whole storage system disastrously ablaze.

Obviously open accumulations of this sort, with large areas of exposed surface, were subject to high seepage and evaporation losses and at the same time presented a serious fire hazard. Pipelines were still unknown and transfer from the "sump" (an old German word, meaning "pit" or "puddle") to the customer was difficult, disorderly, and expensive. It thus became apparent early in the game that closed containers and closed systems provided the only safe and sane answer to the storage and transportation problem.

Towards Automation

The use of the indiscriminate barrel and its ultimate standardization has already been discussed in the chapter on measurements but that is a very small part of the complete story. I have long maintained that the contribution of the pipe liner has been an essential and actually exciting element in the petroleum industry's march from fumbling uncertainty to the current era of measurement and movement by automation.

Pumpers, gaugers, station engineers and their ilk, are a gradually disappearing segment of the petroleum populace. It is slowly but surely being displaced by a series of electronically controlled mechanisms, and devices of various obscure sorts, that weren't even dreamed of a few years ago. Already whole pipeline systems are operated by one or two men who can determine the quantity and quality of oil in a tank that is miles away; can open a distant valve and start a distant pump; and send a river of petroleum coursing through pipelines from one end of the country to the other without any more strenuous effort than the pushing of a few buttons. However, one can better understand any modern process if one is first cognizant of that from which it has evolved, so for a start let us consider the once ubiquitous gauger who, if something isn't done about it before long, will soon be as scarce as the whooping crane or even the moa, which any punster will gladly tell you simply "ain't no moa."

What Is a Gauger?

The origin of the word "gauge" appears to be unknown but its meaning is quite clear. It means to determine the exact measurement of anything—rainfall, the thread of a bolt, even the quantity of water that flows downstream. In the petroleum industry, the gauger is a measurer of oil quantity in a rough way of its quality. Just when, under his present title, he began to play a distinctive part in the scheme of things is rather difficult to determine but the nature of his duties being known it will at once be evident that in the very birth of the industry someone must have acted in a similar capacity to that in which the gauger is now employed.

No doubt in those ancient days when the Burmese laboriously carried their crocks of oil down to the river bank, a tally man with his abacus kept track of the number of loads that were dumped in the hold of each barge, and made some sort of record of the cargo. Later when the early American settlers soaked their blankets in oil seepages and wrung them out into tubs, it may be taken for granted that someone was delegated to weigh the blankets before and after delivery and in general to act the part of gauger. It is most likely, however, that the position as we know it today had its inception about the time that the pipe line system began, that is, in 1860.

Early Methods

The methods at first must have been very primitive for we know that even in our own time they have been materially altered in order to keep step with the general development of the petroleum industry. I can still recall, although somewhat vaguely, the good old days when the gauger made his rounds in a buggy, and threw rocks at the tanks to find out whether or not they were filled and consequently ready "to ship." The sound of a pebble striking a full tank lacked the resonance that resulted from the striking of an empty one. Night gauging was then done by the aid of a stable lantern which was deposited at a safe distance from the tank and when the "gauge pole" (measuring stick) was withdrawn from the oil, it had to be carried to the lantern to be read. Anyone who would dare to carry a stable lantern within walking distance of an oil tank in these hazard-conscious days would be mobbed.

Equine Sagacity

Not the least part of the job in the horse and buggy era was the necessity of playing valet to the old gray mare, and most of the boys carried out this portion of their work to such good effect that some of the venerable steeds knew the tortuous lease roads and the tank sites with which they were concerned quite as well as their masters. Some of them indeed, were reputed to be able to do almost

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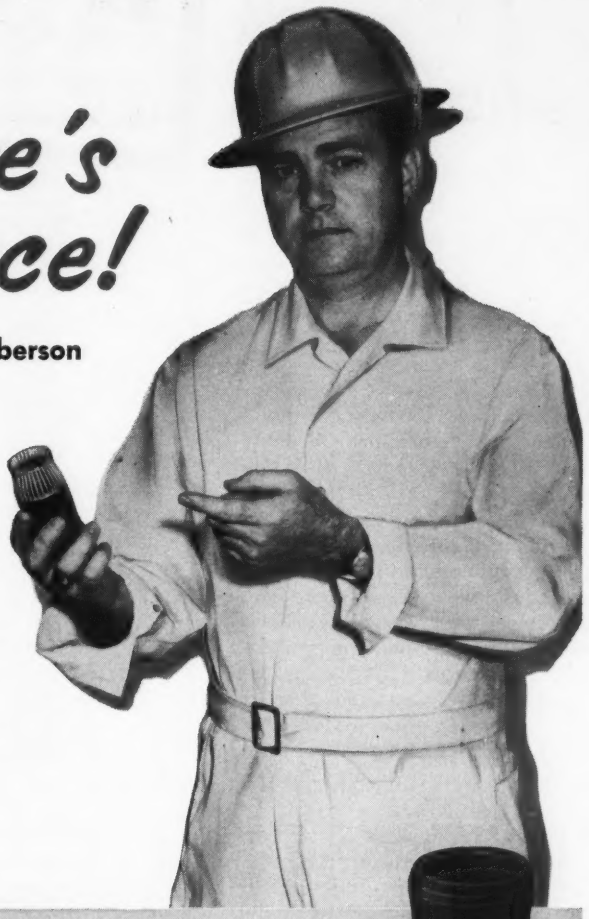

You wouldn't wear a tux in a ball game, or overalls at a formal dance — and, for successful swabbing, it's more important that your swab be correctly dressed to suit the conditions. Guiberson, and only Guiberson, offers a selection from nine types of cups and suitable swabs in sizes ranging from 1" through 13⅜".

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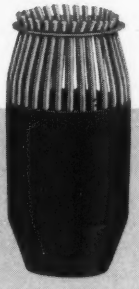

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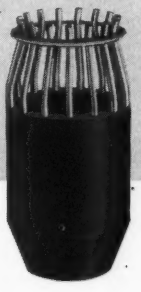
More flexible, for medium or heavy loads in wells of any depth.



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Even more flexible, for light to medium loads in shallow wells, stripping light loads in wells of any depth, and for use in rough or deformed pipe.

Swabbing in oil, water, or acid-water, these cups last and last and lift fluid at a rate that assures a profitable operation. It stands to reason that, with the many variables possible in swabbing, no single type of cup or swab can give maximum performance under all conditions. If you have a special problem, your Guiberson representative will gladly recommend the combination of cups and swab best suited for your particular situation. Supporting his selection is the experience and integrity of the first and foremost swab manufacturer in the world.

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anything but make out a run ticket. As already remarked, however, increased production and speedier and more efficient transportation methods soon rendered the ancient ways inadequate and gauging like everything else approached nearer and nearer to the ultimate in accuracy and precision.

Varieties of Crude

To make the duties of the gauger more easily understood, it should be remembered at the outset that crude oils from different locations may vary considerably in character. In a general way, three types of petroleum are recognized—refining crude, asphalt crude, and fuel oil. The class to which any particular oil belongs is determined by analysis of advance samples, and indicates for what purpose in the refinery that oil is best suited. Thus refinery crude is rich in the more volatile products and is used for the manufacture of gasoline, kerosene, diesel oil, etc. So-called asphalt crude contains the peculiar stocks from which lubricating oils and asphalt are separated. Fuel oil as the name implies is low API gravity (high specific gravity) crude of a variety that is commonly used as fuel.

It is, of course, necessary for obvious reasons that these three grades be segregated and it is the duty of the gauger to acquaint himself with the nature of all oils produced in his area in order that he can satisfactorily accomplish this segregation. The three classes are further divided into wet and dry oil, and still further into "purchase" and "production" oil. The former is crude that is purchased from another company, or an independent lease owner. The latter is produced by the operating company from its own properties held in fee (that is, owned outright). In the gauging of purchase oil a representative of the company or lease owner is always present to witness and certify the measurements, and even in the case of fee oil it is customary for representatives of the production and pipeline to check the oil out of one department into the other. Apart from these regulations, the gauging of all oils is carried out in about the same manner.

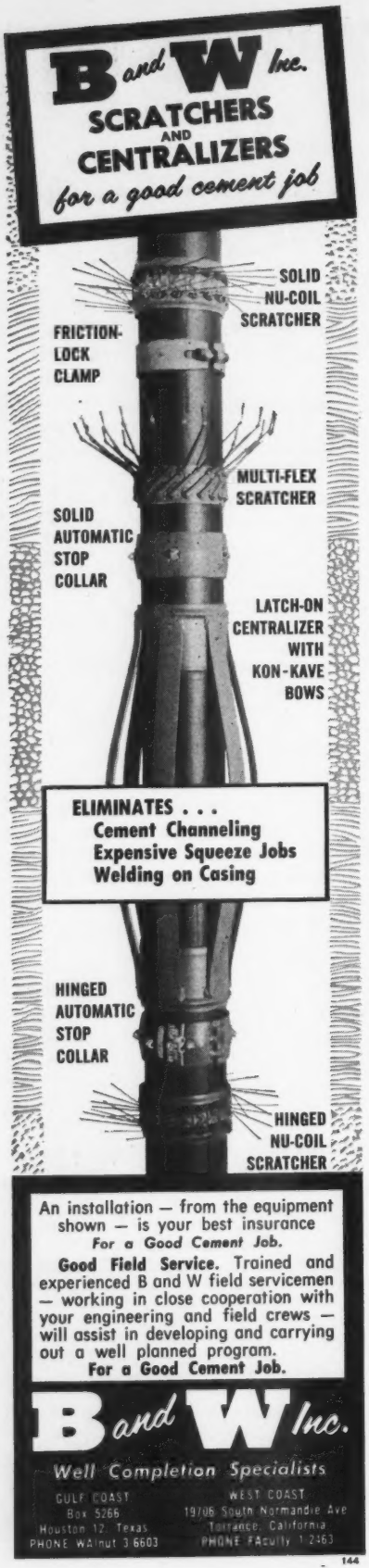
Tank Strappers

The large petroleum company maintains a department whose function is to calibrate the tanks which are used for receiving, shipping, or storing oil. That word "calibration," in this instance meaning "to measure the capacity of" is an interesting etymological specimen. It is believed to stem from the Arabic **qalib**, "a mold"; so to the bullet or shell that was shaped in the mold; thence to the gun or cannon from which the bullet or shell was projected; and finally to the "caliber" of the rifle or cannon which is a measure of the bore. The "caliper" that is used by the machinist to ascertain either inside or outside dimensions, derives its name from the same root, so caliber and caliper are lingual first cousins.

The calibration of oil tanks is known as "strapping," presumably because the circumferential and other measurements are taken with a "strap" type steel measuring tape. From the outside circumference of the tank at various elevations; the height; the thickness of the steel plates; and the size and location of any internal structures or materials; tables are prepared to show the capacity in barrels for every eighth or quarter-inch of depth from the bottom to the upper loading limit. The gauger is furnished with copies of such tables for all tanks in his territory and thus has the means to determine the capacity of any interval in any tank. It has previously been remarked that every lease at one time had its own battery of receiving tanks, nearly always arrayed in pairs so that when the effluent from a well is being measured in one, the flow can be switched to the other.

Gathering System

The well tanks are connected to the company gathering lines through which their content may be gravitated or pumped either directly into main trunk lines leading to the refinery or through district lines to the nearest tank farm. The reason for the intermediate step is simply that unlike commodities can not be mixed and unless the receiving company has enough lines to carry all available varieties of crude, each type has to be batched through the lines to avoid as far as possible the likelihood of commingling. If, also, the crude oil as picked up in the field contains more than 3% of water and sediment, it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will tend to give trouble in the refinery stills, and must therefore be dehydrated before being injected into the main trunk lines.

Underground Maze

That in brief is the course of the crude from the time it is brought to the surface at the well until it finally gets beyond the jurisdiction of the field and pipeline departments. In reality, however, the transportation and storage phases of operation are complicated by a tremendous amount of detail that can to the uninitiated be an exceedingly intricate and confusing business, but is not nearly so complex as it might appear. There is nonetheless some justification for the layman's anxiety. A cynical European waiter once stated that Americans were incapable of understanding anything that was profound or unduly involved. It is pretty certain that this skeptic had never seen a map of the pipelines that lie immediately under the ground at Santa Fe Springs, Long Beach, or Huntington Beach. Following a specific line in any of these is like trying to keep one's eye on a certain string of spaghetti in a cooking vessel.

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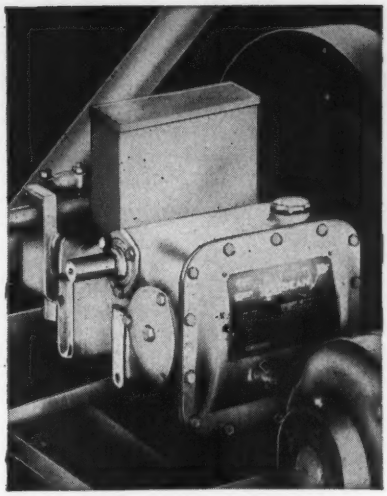
And Away We Go!

But now let us take a trip with a pipeline gauger on his daily rounds and perhaps in this way we can get a more comprehensive idea of his duties. The leases in his district are often widely scattered and he is, therefore, obliged in the course of his day's work to cover a considerable expanse of territory. Luckily, the horse and buggy became passé some time ago and now when the gauger is ready to go about his chores, he simply steps on the starter, sets his automatic gear-shift lever, and is off over the smooth lease roads without even raising a respectable dust cloud. His car is equipped with a built-in cabinet that holds all the paraphernalia he will need as he makes his rounds. This consists essentially of sample thief, sample jars, gauge tape, seals, a seal press, and a record book.

By experience he knows offhand the production of each well in his territory, and knowing in addition the capacity of the well tanks, is able to determine within reasonable limits, when any particular tank will be ready to run. Thus when he starts out, his route is already settled, and he has made advance arrangements to meet lease representatives at those points where oil is ready to be shipped. He goes to the first tank on his list, and having satisfied himself that all the free water has been bled from the oil through a drain pipe at the bottom of the tank, he seals the valve on this line so that it can't be opened without detection. Then he takes the high gauge reading. This he does by dropping a steel inch tape through the oil until a plumb-bob



JOHN BEAN TRIPLEX PUMP MAINTENANCE: 30 MIN. PER YEAR!

MORRIS, OKLA. — The photo above shows a John Bean Model 410 Triplex Pump installation for a leading national oil company in Eastern Oklahoma. Its maintenance record is dramatic proof of unusual reliability and performance — 30 minutes, once-a-year to replace piston cups! Yet, the pump has been in constant 24-hour operation for over two years.

Used to backflush a water treating filter in a water flood plant, the pump handles 340 barrels of salt water per day at 90° temperatures. Rated performance of the John Bean Model 410 is 10 GPM displacement at 600 PSI.

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that constitutes its nether end just touches bottom.

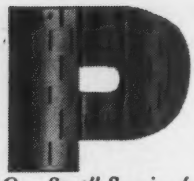
The High Gauge

The depth of oil in the tank, is then read off on the tape and its temperature is determined by means of a thermometer previously suspended at the approximate center of the liquid. When the initial temperature has been taken, the thermometer is lowered to a point that will indicate the temperature of the oil remaining when the low gauge is taken later. The data so far acquired, the high gauge reading, oil temperature, lease tank number, etc., are duly recorded and now the gauger's next care is to secure a representative sample.

Most tanks are equipped with a series of sample cocks, spaced at intervals on the side, and in such instances he simply draws off an equal volume from each into his sample jar. If sample cocks are not available he takes his sample with a heavy copper bottle, known as a "thief" (once used by oil scouts to "steal" a sample, hence the name). This device is fitted with an adjustable opening so that it can be used in oils of varied viscosity (flow resistance). It is simply lowered through the oil to the suction line and raised again at such a rate that it is not quite full when withdrawn. The fact that it is only partly filled when withdrawn supports the assumption that liquid has been entering the thief at all levels, whereas if it is full when withdrawn, there is no way of telling whether it became full half-way down or half-way up, and to secure a proper sample it is then necessary to reduce the opening in the neck of the thief.

Sealing Off the Outlets

The gauger, provided he knows the character of the oil, is now ready to deliver the shipment, and if the tank is on a common manifold with several others, he examines the suction gates of these others to make sure they are closed and sealed. The water drain valve, sample cocks, and any and all connections from which oil may be withdrawn either purposely or by accident, are similarly sealed. The suction valve on the shipping tank is finally opened, sealed in the open position, and the oil is pumped or gravitated into the gathering or trunk lines as required. In all cases where the gauger is not familiar with the character of the oil he is shipping he must complete his tests before turning it into the line; but he is usually thoroughly conversant with the production of his district and can anticipate quantity and quality with uncanny accuracy.



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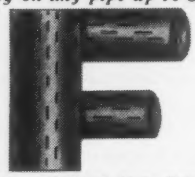

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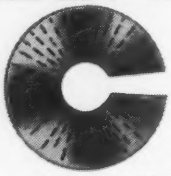

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Water & Gravity Tests

When he has completed his rounds, he returns to his lab and makes his "cuts" and gravity tests on all the samples he has taken. The cut is the field term for water and sediment test, in which a carefully measured quantity of oil is diluted with a standard solvent and whirled rapidly on a high speed centrifuge, until periodic reading of the separated water and sediment shows no change. The test is quite simple but because of the great volumes of oil involved, it must be performed with the utmost care. The amount of water and sediment in the sample determines the quantity of clean oil in the shipment, hence the importance of rigidly observed standard procedure. The gravity determination hardly needs description here. It is made with a common or garden hydrometer such as is used in testing battery acid, and the fact that the price paid for the crude is dependent on the gravity is enough to emphasize once again the importance of accuracy.

The Record

All the gauger needs now to complete his run ticket, which is in effect a receipt for the oil, is the quantity of oil shipped. When sufficient time has elapsed for his tanks to be run out, he returns and measures the depth of the remaining oil and notes its temperature. With the aid of gauge tables and certain volume correction factors, he calculates the exact quantity of net oil involved and since he already knows its gravity, he now has the whole story. This and all the other pertinent data is inscribed on the run ticket and when it has been duly signed by the gauger and lease representative, it constitutes a certified statement that is as comforting to the shipper as money in the bank. This is how it was and still is in many places but we are just now in the process of entering into a new phase of pipe line operation in which people are being rapidly replaced by tele-controls and tele-instruments of infinite variety. Of this more anon!

The oilman: makeup expert for 65,000,000 stars.

That's the number of American women who use cosmetics—beauty aids that help make a star of the lady in your life. She probably doesn't know about your part in making it possible. You—and all oilmen—help produce oil-based chemicals for face creams, lipsticks, hair sprays, bath oils, permanent wave lotions. It's a one-and-a-half-billion-dollar industry oil helps to make possible. If you ever hear someone speak out against oil—tell him you're an oilman and proud of it. And tell him why.

SHELL OIL COMPANY

E. S. Dulin Retires From Byron Jackson

E. S. Dulin retired from Byron Jackson on September 1 after 31 years of leadership. Mr. Dulin was president of the company from 1929 to 1958 and has also served as chairman of the board since 1945.

Byron Jackson, one of the pioneer industrial companies of the West, was founded in California in 1872. A manufacturer of centrifugal pumps for irrigation, power generation, nuclear, industrial and municipal services and a leader in oil tools and oil well services, the company became one of the major divisions of the Borg-Warner Corporation in 1955.

In its 88-year history of operation, Byron Jackson has had only four men as chief executive officers. Byron Jackson, whose name the company bears, was followed by John B. Keating in 1913. Andrew W. Rose, the fourth BJ president, was elected to succeed Mr. Dulin in 1958.

Rose, in announcing the retirement, cited Dulin's record of management as "a tremendous measure of this man's deep pride in Byron Jackson and his determination to 'never let down' the employees, customers, and investors who made BJ a respected trademark throughout the world."

E. S. Dulin, chairman of the board of Byron Jackson, retires after 31 years of leadership. Mr. Dulin served as president of the company from 1929 until 1958. He has been chairman of the board since 1945.

Rose pointed out that Ned Dulin led the company through two crucial periods of the company's growth—the critical depression years and the challenging reconversion and diversification eras after World War II.

In addition to his long management service to Byron Jackson, Dulin is also a director of a number of other major California industries. He will continue to attend his outside personal interests and will maintain an office in the Statler Center Building.

Three presidents representing more than 47 years of Byron Jackson leadership are shown at the retirement of E. S. Dulin (left). Mr. Dulin served as president of the company from 1929 until 1958 and has been chairman of the board since 1945. John B. Keating (center) headed the company from 1913 until 1929, and Andrew W. Rose (right) has been president since 1958. The photo behind Mr. Dulin shows Byron Jackson, founder and company president from 1872 until 1913.

Turco Announces Promotion

F. Carl Hirdler, Jr., has been appointed as technical supervisor of the Petroleum and Petro-Chemical Division of Turco Products, Inc. During his seventeen years with Turco, Hirdler has concentrated upon drilling and oil lease operations, petroleum refinery consultation, and chemical additive usage in petroleum processing.

James T. Wood, Jr. Retires

James T. Wood, Jr., senior vice president and chief executive officer at Los Angeles for Texaco Inc., retired August 31 under the Company's Pension Plan, after more than 30 years of Texaco service.

A native of Montana and a geology graduate of Stanford University, Wood joined Texaco in 1929 as district geologist at Bakersfield. In 1930 he was made assistant chief geologist with headquarters in Los Angeles, and the following year became chief of the lands and leases division. From 1938 to 1949 he served as division manager, producing department, Pacific Coast division.

Wood was appointed assistant to the president, New York, in 1949, and the following year was elected Texaco's vice president in charge of foreign operations (Western Hemisphere and West Africa). He became vice president at Los Angeles in 1956, and was elected senior vice president and chief executive officer at Los Angeles in 1957.

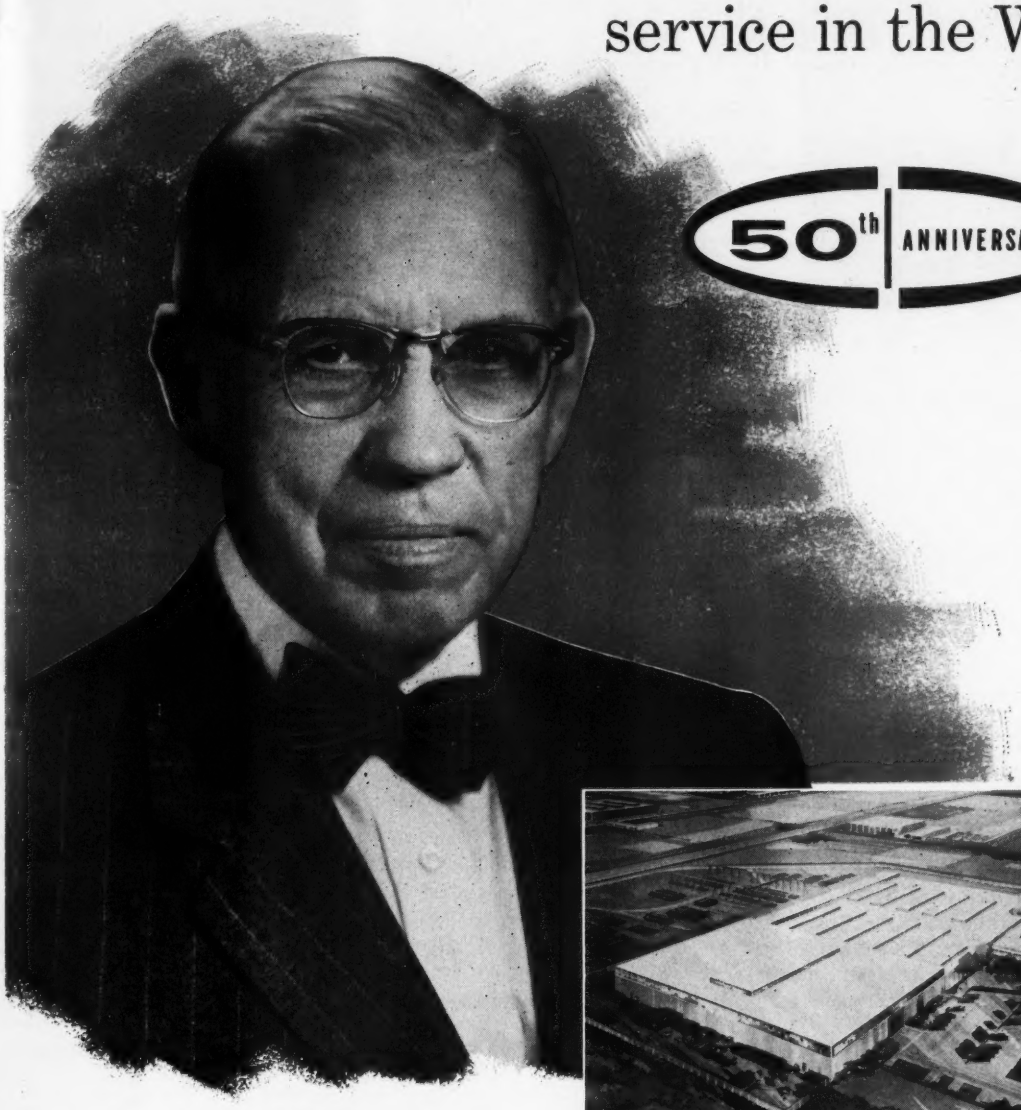
Wood has served as a director of the Western Oil and Gas Association and the Belridge Oil Company.

1960 Annual Meeting Of Interstate Oil Compact Commission

The 1960 Annual Meeting will be held at the Westward Ho Hotel in Phoenix, Ariz., December 5-7. Reservations will be handled through the IOCC Headquarters Office and forms will be mailed about the middle of September. Due to limited capacity, some rooms have been made available at the Sahara Hotel, as well as rooms at the Westward Ho Hotel.

Culminating our first half century's service in the West!

50th ANNIVERSARY



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THE KEENAN STORY

By DICK SNEDDON

It is an interesting experience to take a tour of the capacious, recently modernized office and plant of the Keenan Pipe and Supply Company at 2112 East 27th Street, Los Angeles, and to see the endless variety of pipe, valves, and fittings, all neatly stored in the yards and warehouses in easily access-

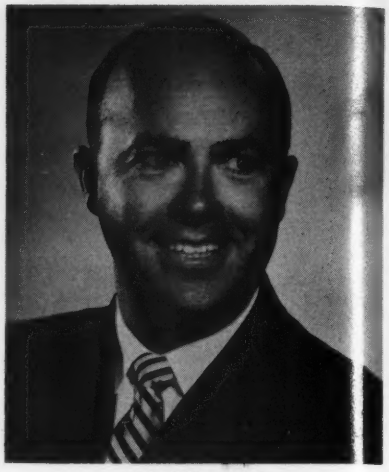
Pete Keenan

ible and orderly array. No one is singing the blues in this bustling organization. The whole atmosphere of the place is so thoroughly permeated with excitement, you can almost hear the walls crackling as the business expansion takes place. Here is really a fine example of the healthy and rewarding growth that springs from the recognition of a vital industrial need and a consistently well directed effort to take care of it.

Actually it doesn't take long for an observant person to determine whence come the calories or b. t. u's that give Keenan Pipe and Supply Company its oomph. Pete Keenan, president of the Company, is a man who brims over with the sheer exuberance of living, and takes the competitive challenge of free enterprise with all the zest of an Olympic contestant. He is a completely uninhibited gentleman with an obvious sense of humor and a justifiable pride in what he has accomplished and is still accomplishing. There is no artificiality in his pose, or indeed his entire makeup. Despite his elevated position, everyone calls him "Pete" and it is quite apparent that he likes it.

That he is not a slave to convention and is not intimidated by the status quo is evident in the fact that he founded the firm back in 1933 at a time when almost everyone else had the depression jitters and retrenchment was the prevailing mania. Under his direction the Company began operation in the supply business in a modest way at 825 South Maple Avenue, Los Angeles, and inside of three years had to move to larger quarters. By 1938 the Keenan urge was so well recognized that the firm was named a distributor for National Tube welded and seamless steel pipe, and just two years later was again bursting at the seams. It was then that the present Los Angeles site was acquired, at least enough of it on which to build an office structure and warehousing facilities. Additional contiguous property was subsequently added and the present layout with its recently enlarged and improved quarters, two warehouses, and extensive pipe yard, now occupies some 6½ acres.

Meantime, the Keenan influence was spreading and the Keenan force was expanding. To supply the burgeoning demand, branches were opened in Bakersfield, Denver, North Hollywood, San Bernardino, San Diego, Phoenix, Tucson, and Las Vegas. These and the local headquarters were staffed with sales and service engineers, skilled in the pipe supply field, men whose basic philosophy was simply to get what was needed where it was needed in the shortest possible interval of time. In



Fred Keenan

1958, by way of reward for long and meritorious merchandising success, the Company was made a full line stocking distributor of National Tube oil country tubular products. Early this year, Keenan Supply Company bought out the long established and well regarded distribution facilities of the Crane Company in Southern California.

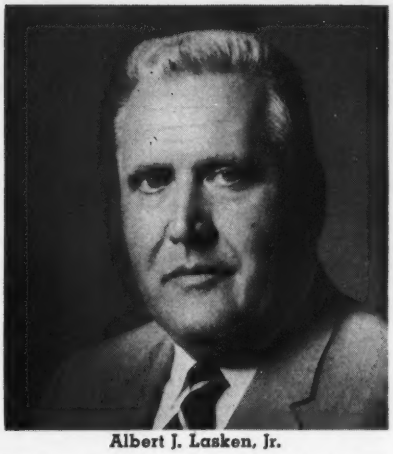
This substantial acquisition in addition to Los Angeles, included the purchase of the total Crane inventory, machinery, present and future delivery commitments, building and property in San Bernardino, and the rental of plant facilities in San Diego. The Aloyco line was added still more recently so that today Keenan is one of the largest organizations in the oil and general industry supply business in the Western states. At the present time it is a leading warehouser and distributor of National Tube oil country tubular goods;

Keenan Pipe & Supply Co.'s. Los Angeles headquarters

National Tube welded and seamless steel pipe; Crane brass, iron, steel, and alloy valves, and other equipment; Aloyco gate, globe, needle, and other valves; Walworth lubricated plug valves; Ladish welding fittings; and an almost indeterminate array of pipe accoutrements and appurtenances.

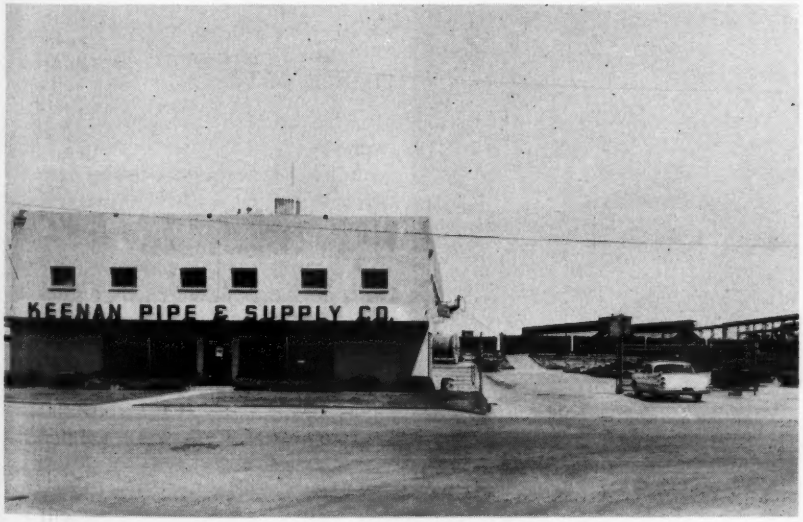
Always conscious of the value of adequate supplies; proper cataloguing and storing for easy accessibility and prompt delivery; and ready availability of field servicing; Pete Keenan has been coincidentally aware of the need to gather about him men, all down the line, well equipped for their respective assignments. Fred Keenan, executive vice president, is a lively, energetic chap—like his father, a complete extrovert who enjoys people and particularly enjoys his role in the expansion of the family enterprises. After initial experience in the plant during high school and college days, he began full time employment in purchasing, following his graduation from University of Southern California in 1937. He later became vice president in charge of purchasing, and at the close of 1959 was elected executive vice president. John Keenan, still younger scion of the Keenan dynasty entered the firm in 1940 and is currently vice president in charge of branches.

Others in the executive group who are widely known and well regarded in California industry are Ray La Rock, vice president in charge of heating and engineering products, whose affiliation with the firm began in 1939; Albert J. Lasken, Jr., vice president of the oil and industrial division, a pleasant and effective sales promoter who joined the firm in 1953; Eric Lemke, a modest but thoroughly capable chap, recently appointed manager of tubular sales, a member of the Keenan staff since 1954; and Roy Johnson, lately returned from an important assignment in New York, and charged here with the management of contract sales, a responsibility for which he is eminently fitted.



Albert J. Lasken, Jr.

Keenan Pipe & Supply Co.'s Denver Branch



Bakersfield Branch, Keenan Pipe & Supply Co.

It is quite evident that Keenan Pipe and Supply Company has reached that enviable stage of development at which its continued success is just about as nearly assured as business success can be. Through the astute ministrations of its highly adaptable founder, Pete Keenan, it has grown to substantial dimensions; is well housed, well manned, and well accoutered; and thus it has only one way to go—forward. With a firmly implanted policy of maintaining adequate stocks of top line goods, and furnishing prompt delivery and friendly service, the Company heads into the future with heaps of confidence, a quite appreciable measure of pride, and a deep feeling of gratitude to its customers who, after all, are the real basis of success in any form of merchandising enterprise.

Luncheon Meeting

Dr. D. J. Doeglas, Professor of Geology and Mineralogy at the University of Agriculture at Wageningen, Holland, addressed the luncheon meeting of the Pacific Section, A. A. P. G. Dr. Doeglas, an A. A. P. G. distinguished lecturer, discussed "Sedimentological Studies of Recent and Old Sediments, A Comparison."

The luncheon was held Friday, September 9, in the Rodger Young Auditorium, Los Angeles.

Don B. Grable

Blackwell & Sunde, Inc. Appoints Manager

Don B. Grable has been appointed manager of production service and drilling for Blackwell & Sunde, Inc. Grable, who began his duties this month, has been associated with the petroleum industry for thirty-five years. His long and varied experiences have been in the overseas fields as well as United States, particularly Los Angeles Basin Area.

During the past five years he was Manager of Operations for Thornbury and Geis in Italy.

Continental-Emsco Publishes Bulletin on Rotary Selector Valve

A new Win-Well Green Triangle Rotary Selector Valve bulletin, outlining various features and applications, has recently been published by Continental-Emsco Company.

This valve replaces normal headers in applications such as manifolding, metering, testing, gathering, tank-switching, water-flooding and product routing. Three models of the valve have 4, 7, and 8 inlets for isolating one incoming flow line while fluid from the other lines continues through the normal production system. It is manually or automatically operated.

For a good look at the working parts of this Green Triangle Rotary Selector Valve an exploded view is included. There is also a listing of available models and sizes.

For copies of this bulletin write Advertising Department, Continental-Emsco Company, P.O. Box 359, Dallas 21, Texas.

Tretolite Booklet Explains Swabstix

Tretolite Company division of Petrolite Corporation has announced availability of an 8-page brochure describing the company's new product, SWABSTIX Flow Inducers.

The booklet explains the new well-swabbing concept, how and where the SWABSTIX Flow Inducers are effectively applied, and contains performance data on a number of wells.

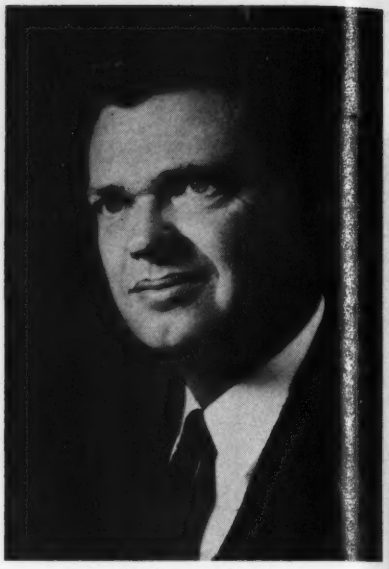
For a free copy of the new brochure write Tretolite Company division of Petrolite Corporation, 369 Marshall Avenue, St. Louis 19, Missouri.

Mobil International Names Taylor President of Affiliate Company

Mobil International Oil Company has named **Spence T. Taylor** president of its affiliate company, Mobil Oil de Venezuela. Taylor, a graduate of the University of Southern California holds A.B. degrees in both geology and petroleum engineering.

He joined Mobil Oil Company de Venezuela as a geologist in 1946 and was named manager of the company's exploration department in 1955. He was appointed executive vice president in February, 1959. For four years prior to joining Mobil of Venezuela, Taylor was chief petroleum engineer for Long Beach Oil Development Company.

Spence T. Taylor



William E. Moore

Wm. E. Moore Made President Tejon Ranch

The board of directors of Tejon Ranch Company has elected **L. H. Rochford** as chairman and **Wm. E. Moore, Jr.**, as president and chief executive officer, **Arnold D. Haskell**, retiring chairman, announced.

Rochford has been president for the last 12 of the 17 years he has been with the land utilization and development company. Prior to that he was with the Agricultural Extension Service for 20 years in California and Colorado.

Moore, 39, has been executive vice president for the past two years. A business administration graduate of Stanford University, he joined Tejon in 1947 as assistant to the president and became a vice president in 1948. He has concentrated on oil activities and land development.

For most of these years, he has served as a director and officer of a number of groups which are actively working towards an adequate, long-range water supply for Central and Southern California.

Haskell said he is relinquishing his posts as chairman of the board and chief executive officer to devote more time to the charitable and educational purposes of the M. H. Sherman Foundation of which he is president. However, he will continue as a Tejon Ranch director and will retain his major stock ownership in the firm.

It takes only one line
to pump all medium to deep wells

CONTINENTAL-EMSCO D+B CHALLENGER PUMPS

Various metals, pump types and pump combinations give *extra flexibility* to D+B Challenger pumps. Interchangeability of their API parts cuts inventory costs. Types are available for all well conditions . . crooked or slant holes . . medium deep to wells over 7,000′. Challenger pumps can be assembled to pump stripper wells, sandy or gaseous fluids. Many corrosive resisting plunger-barrel tube combinations and special cages, fittings and balls and seats can be selected to handle sweet, sour or oxygen corrosion. Special pump combinations to provide extra volume, pump extremely gaseous fluids and meet other well peculiarities can be assembled from standard Challenger pump parts with the use of only a few special parts.

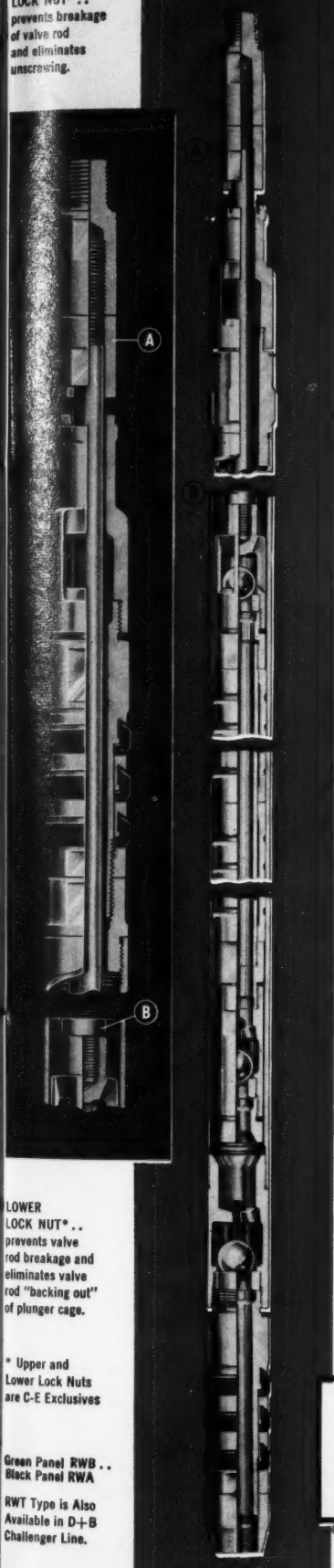
Special Features

VALVE ROD COUPLING AND WING LOCK NUT allow precise spacing of traveling and standing valve for maximum pump efficiency.

PLUNGERS are made of various corrosion resisting metals. They are interchangeable between all types of Challenger pumps and may be switched *end for end* within pumps for longer wear. Plunger sections may be replaced economically after long and hard usage.

ARMORED CAGES are precision machined and given special heat treatments. Ball guides are treated to an extreme hardness to resist wear and assure long life. Outside diameter of body of the cage is given another special heat treatment to insure toughness and durability. C-E's Armored Cages are standard in the make-up of the Challenger pump.

Put D+B Challenger pumps
to work in your wells.



UPPER LOCK NUT* . . prevents breakage of valve rod and eliminates unscrewing.

LOWER LOCK NUT* . . prevents valve rod breakage and eliminates valve rod "backing out" of plunger cage.

* Upper and Lower Lock Nuts are C-E Exclusives

Green Panel RWB . . Black Panel RWA

RWT Type is Also Available in D+B Challenger Line.

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Continental-Emsco Company C. A., Caracas, Venezuela • Plants: Houston and Garland, Texas; St. Albans, Herts., England • *Representatives in All Principal Oil Fields of the World*

E. R. Koberg

Byron Jackson Tools Names Koberg Vice President

E. R. Koberg, export sales manager has been made a vice president of Byron Jackson Tools, Inc. and will headquarter in London, England beginning October 1.

The announcement was made by **Robert Harcus,** executive vice president of the Byron Jackson Division of Borg-Warner Corporation.

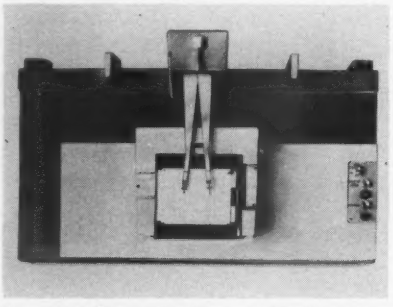
Ed Koberg previously has directed BJ Oil Tool export sales operations from the company's offices in New York City. According to the announcement, the new London headquarters for Export Sales will provide "closer proximity to Free World oil activities outside the United States and allow Mr. Koberg closer liaison with Byron Jackson N.V., our company's rapidly-expanding manufacturing plant in the Netherlands."

At the same time, **John Bonner** was named export representative for Byron Jackson Tools, Inc. and will be responsible for BJ Oil Tool sales operations centering in the company's existing offices at 580 Fifth Avenue, New York, N. Y.

New American Chart Integrator Provides Three Values from Single Run

A new chart integrator for use with American strip charts and conventional instrument round charts has just been introduced by American Meter Company.

In announcing the new chart integrator, C. B. Dushane, Jr., vice president-sales, pointed out several advantages. The integrator provides three values



New chart integrator for use with American strip charts.

from a single run. It not only computes the chart extension for differential and static pressure, but also provides readout values for the average absolute static pressure and the average differential pressure. The American Chart Integrator handles both American strip charts and conventional round charts by means of a simple adaptor plate supplied with the instrument.

According to Mr. Dushane, the new chart integrator has been developed for greater efficiency in chart interpretation and for ease of operation with reduced eye strain and fatigue. Records are easy to check as follower pens superimpose a light ink line on the original chart record.

Complete information on the new chart integrator can be obtained from Advertising Department, American Meter Company, 920 Payne Ave., Erie, Pa.

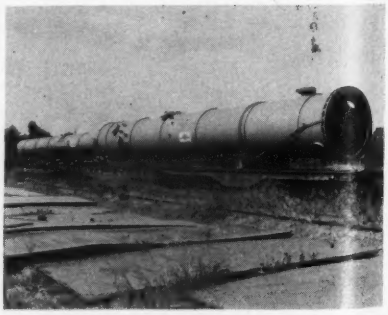
Merrill W. Haas

Merrill W. Haas in Charge Humble Exploration

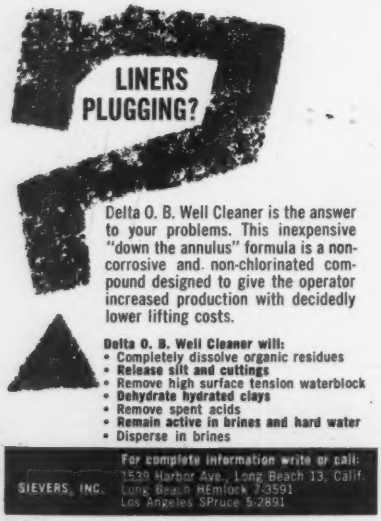
Appointment of **Merrill W. Haas** as vice president for exploration of Humble Oil & Refining Company, a newly created post, was announced recently by **Morgan J. Davis,** president.

Haas has been a vice president and member of the board of management of Humble's Carter division at Tulsa. In his new position he will be responsible to the Humble board of directors for all exploration activities.

Haas joined Humble in 1933 as a research scientist, later spent fifteen years with affiliated companies in Venezuela, and moved to Carter as a geologist in 1950. He was named manager of Carter's exploration department in 1956 and a vice president in 1957.



One of the heaviest weight vessels fabricated by Master Tank & Welding, Dallas, Texas, is this Deethanizer with a total weight of over 245,000 lbs. The tower was shipped via 3 flat cars to a new plant location in Southern Louisiana. Prior to shipment, the Deethanizer was X-rayed and stress relieved. It is a 60" OD and 98' OD over all bottle neck with a length of 145'.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LOS ANGELES BASIN

Salt Lake Wells Tested

Buttram Petroleum Corp. ran short production tests on Gilmore Nos. 1, 2 and 3 with the total production from the three wells reported at 1200 b/d of 18° gravity oil cutting 0.1 per cent. The test was made through restricted bean and under favorable conditions and probably do not indicate the maximum potential of the wells. Surface locations of the wells are in the northwest quarter of Section 21-3s-14w near the intersection of First Street and Stanley Avenue. Approximate completion depth of the wells is 3200 feet.

Potrero Outpost Test

Standard Oil Company is preparing to spud Hardy Community No. 3, an outpost test, located near the center of Section 34-2s-14w on the southwest flank of the field. The Sun Drilling Corp. has the drilling contract.

Honor Rancho Development Well

Texaco Inc. is ready to spud Honor Rancho (NCT-1) No. 29, a field development well, located in the southeast quarter of Section 1-4n-17w.

Rosecrans Outpost Test

Jack Bracken, mid-continent operator, is making arrangements to drill Bolson No. 1, an outpost test of the field in Section 20-3s-13w. Bob Quinn, Petroleum Engineer of Long Beach, will be in charge of drilling operations on the 8000 foot test.

Beverly Hills Development

Signal Oil and Gas Co. is drilling below 3500 feet on Signal-Richfield-Olympic Community No. 2 in Section 25-1s-15w. Location of the test falls south and west from the intersection of Pico Boulevard and Peg Place.

Brea-Olinda Completion

Union Oil Company completed Stearns No. 177 pumping 391 b/d of 26.7 gravity oil with a cut of 8.4 per cent. The well is producing from several perforated intervals with 2336-4800 feet. Located in the northwest quarter of Section 7-3s-9w, the completion was drilled to a total depth of 5024 feet and cemented 7" casing at 4800 feet.

Yorba Linda Field

Shell Oil Company has staked locations for two new wells on Section 15-3s-9w. Both wells, Olinda Four No. 270 and No. 287, are located near the intersection of Citrus and Eureka Avenues. Haney & Williams have the contract to do the drilling.

Val Verde Area Redrill

Standard Oil Company is preparing to deepen Videgain No. 1 to approximately 8000 feet. Located near the south quarter corner of Section 4-4n-17w, the well was originally drilled and abandoned by the Continental Oil Company in November 1947 at a total depth of 5251 feet.

NORTHERN CALIFORNIA

Oil in the Sacramento Valley

The first oil production in the entire Sacramento Valley is being recovered in Texaco Inc.'s McCune No. 1 located in Section 32-8n-1e in Solano County and completed as a gas well in September 1959 from the perforated interval 5585-5502 feet. In the middle of April this year oil was found to be flowing into the gas lines along with the gas. Daily oil production varies considerably with 154 barrels the highest rate gauged. The oil is clean and the average gravity is 32 degrees. Located in the southwest quarter of Section 32, the well was drilled to a total depth of 6000 feet and a string of 4½" casing is cemented at 5648 feet. Casing was gun perforated from 5585-5502 feet and the well completed flowing 5600 mcf of gas per day through a 24/64" bean with pressures of 1700/2100 psi.

Four Texaco Tests

Texaco Inc. has staked locations for four new wells in the northern portion of the state. Two of the tests will be in Tehama County. Hotchkiss No. 1, a 4700 foot test, will be drilled in the southwest quarter of Section 18-29n-2w, and South Corning Unit One No. 1, a 6100 foot test, will be drilled in the northeast quarter of Section 5-23n-2w. Corto Passi No. 1, a 5700 foot test, will be drilled in the northwest quarter of Section 26-2n-5e in San Joaquin County. In Yolo County, location has been staked for Woodland Farms No. 1, a 4600 foot test, in the southwest quarter of Section 9-9n-3e.

San Joaquin County Completion

Great Basins Petroleum Company completed Signet-Luck No. 77X-25 flowing 8000 mcf of gas per day through a ½" bean with 1250 psi flow pressure. Production is from the Blewett 5 Zone. Located in the southeast quarter of Section 25-2s-6e, the well is approximately ¾ mile southeast of production. The completion was drilled to a total depth of 6535 feet and cemented 4½" casing at 5982 feet. Signet Operating and Exploration Company drilled to a total depth of 6510 feet and is running casing on McMullen No. 3, a northerly offset to the Great Basins completion. The test is located in the northeast quarter of Section 25-2s-6e.

Buckeye Test for Gulf

Western Gulf Oil Co. has staked location for Wilking Unit G No. 1 in the northwest quarter of Section 19-13n-1e in Colusa County. The test is one-half mile east of production.

Butte County Wildcat

J. Robert Phillips of Dallas, Texas, is preparing to drill George S. Towne No. 1 in the southwest quarter of Section 19-20n-1e, two miles south of the Durham Gas Field. The well will test the Cretaceous at about 4000 feet. W. S. McBurnie will do the engineering.

E. C. Brown Gas Test

E. C. Brown, Operator, is preparing rig site for Sherman Island Gas Unit A No. A-1 in the southwest quarter of

Section 35-3n-2e in the Sherman Island area of Sacramento County. The well will be a 6000 foot test and is about four miles west of the south end of the Rio Vista field.

Grimes Outpost Test

Cameron Oil Company and Franco Western Oil Co. are moving in rotary to drill Wood-Straube No. 1 in the northwest quarter of Section 4-14n-1e in Sutter County. Location of the test falls approximately one mile northeast of their Helen McLaughlin No. 1 recently completed as a deeper pool discovery, and established a potential of 33,000 mcf of gas per day from both the Upper and Lower Zones.

Yolo County Wildcat Test

In the Jacobs Corner area, C. D. Howe is drilling below 1000 feet on La Jolla-Thornburg No. 1 located in the southeast quarter of Section 29-10n-1e. The well will be a 2900 foot test and is five miles southeast of the Dunnigan Hills Gas production.

COASTAL AREA

Three San Mateo County Tests

Union Oil Company of Calif. has staked locations for three tests in the Peters Creek area, midway between the Oil Creek and La Honda Fields. Frey numbers 1 and 2 will be drilled in the northeast quarter of Section 36-7s-4w and E. L. Moore No. 3 is located in the northeast quarter of Section 6-8s-3w. E. L. Moore No. 2 located in the northwest quarter of Section 6-8s-3w, drilled to a total depth of 4429 feet and after running logs was plugged and abandoned.

Santa Barbara County Offshore

Texaco Inc. is preparing to spud Texaco-Monterey-PRC 2206 No. 3 located on Platform Helen in projected Section 11-4n-33w offshore from Cuarta Canyon. Location of the test is approximately 2000 feet southwest of the discovery wells No. 1 and No. 2. The discovery well is reported to have flowed 1400 b/d of 35 gravity clean oil (unconfirmed).

New Offshore Test

Offshore from Summerland, Standard Oil Co. is preparing to spud Standard-Humble-Summerland State No. 16 located in projected Section 35-4n-26w. Standard-Humble-Summerland State No. 17, located in projected Section 34, is drilling ahead below 6000 feet.

Oxnard Wildcat Test

San Roque Oil and Exploration Company, with offices at 2943 Loma Vista Road in Ventura, Calif., has staked location for McGrath No. 1, one-half mile north of the field production. The well will be drilled to approximately 10,000 feet and is located in the northeast quarter of Section 36-2n-22w.

SAN JOAQUIN VALLEY

Edison Area Wildcat

Hastings Harcourt of Santa Barbara has awarded a contract to the Solar Drilling Co. to drill Tyner No. 1 located in the northeast quarter of Section 3-30s-28e. The well will be a 6000 foot test.

Eight San Ardo Locations

Socony Mobil Oil Company, Inc. has staked locations for eight wells in the San Ardo Field. Two wells will be drilled on the Hambey lease in the southwest quarter of Section 18-23s-11e. Two locations have been staked on the Orradre lease in the northwest quarter of Section 12-23s-10e, and four wells will be drilled on the Orradre-S lease in the southwest quarter of Section 1-23s-10e.

San Emidio Nose Completion

Richfield Oil Corp. completed KCL-H No. 47-10 flowing 365 b/d of 30.2 gravity oil cutting 0.5 per cent. Flow was through an 8/64" bean from the H No. 47-10 flowing 365 b/d of 30.2 feet. The completion is from the deepest producing zone in the field. Located in the southwest quarter of Section 10-11n-21w, the well was drilled to a total depth of 13,472 feet and has 7⅝" casing cemented at 12,093 feet.

Buttonwillow Outpost Gas Test

Carr and Wrath are preparing to spud Sisson Unit No. F1-6 located in the northeast quarter of Section 6-28s-23e. The test is 1800 feet north of Davis et al's No. F4-6 recently completed flowing 900 mcf of gas, and will be drilled to about 3550 feet.

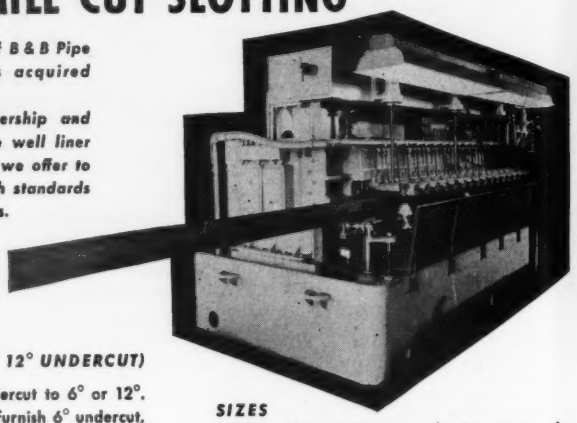
San Benito County Test

Sunnyvale Oil Company is ready to spud Artnell-O'Conner No. 1 located in the northwest quarter of Section 3-18s-9e. The well will be a 3200 foot

VERTICAL MILL CUT SLOTTING

The Perforating Division of B & B Pipe and Tool Company was acquired recently from Kobe, Inc.

Guided by Kobe's leadership and years of experience in the well liner and well completion field, we offer to the industry the same high standards and pattern of perforations.



KEYSTONE SLOTS (6° or 12° UNDERCUT)

The Keystone slots are undercut to 6° or 12°. Our standard practice is to furnish 6° undercut, unless otherwise specified. This angle gives approximately 50% wider opening on the inside of the pipe than the outside in most popular sizes, and proves to be sufficient angle to free any particle that starts through the slot so that it will not clog. Also this angle does not present a wire edge at the outside of the casing that will cause the slots to be cut out.

SIZES

Straight slots or Keystone (undercut) can be supplied in mesh size widths from .010" to .500".

Fine gauge slotting can be supplied in clusters of four slots per cluster on 6" or 12" centers, staggered pattern in mesh sizes from .012" to .025". The cluster pattern is not supplied undercut.

FINISH

All pipe is thoroughly painted with a petroleum soluble paint. Threads on the pipe and in the coupling are thoroughly cleaned as a last operation and lubricated with zinc grease. The inside of the pipe is free from burrs and also from loose chips. Pipe for foreign shipment will be given an extra coat of paint on the outside and either greased or painted on the inside.

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DIVISION OF THE DOW CHEMICAL COMPANY

test and is about 800 feet southeast of production.

Wheeler Ridge Completion

Richfield Oil Corp. completed KCL-L No. 47-36 flowing 200 b/d of 21.2 gravity oil with a cut of 0.5 per cent from the intervals 5695-5660 feet and 5574-5482 feet. The completion is located in the southwest quarter of Section 36-11n-20w and was drilled to a total depth of 5695 feet. 7" casing is cemented at 5482 feet. Rotary is being moved to a new location, KCL-L No. 72-35, located in the northeast quarter of Section 35-11n-20w.

SE Burrel Completion

Arrowhead Exploration Company completed Kochergen No. 13-8 flowing 129 b/d net of 35 gravity oil with a cut of 57 per cent. Flow was from the perforated interval 6809-6804 feet through a 14/64" bean with a flow pressure of 200 psi. Located in the northwest quarter of Section 8-17s-19e, the well was drilled to a total depth of 7000 feet and cemented 4½" casing at 6864 feet.

Reserve Wildcat Test

Reserve Oil and Gas Company is moving in rotary to drill Well No. 31-22 located in the northwest quarter of Section 22-11n-19w. The well is scheduled to go to approximately 12,000 feet and is 1½ miles east of the North Tejon field production.

Semitropic Test Abandoned

McCulloch Oil Corp. was unable to recover the drill pipe which stuck when the well attempted to blow out, and abandoned McCulloch-Arrowhead-KCL 444 No. 1 at a total depth of 3686 feet.

Vallecitos Outpost Test

Shell Oil Company is drilling below 3400 feet on F & I No. 73-6 located in the northeast quarter of Section 6-17s-11e in San Benito County. Location for the test falls 1800 feet southeast of the production in the southeast area of the Vallecitos Field.

Wildcat Test for Shell

Shell Oil Company's Baker No. 2 is drilling ahead below 4200 feet after losing circulation at 625 feet, 1155 feet and 1212 feet. Located in the southwest quarter of Section 6-30s-21e Kern County, the test is two miles northwest of the northwest producing area of the Belgian Anticline field and one mile southeast of the company's Baker No. 1, abandoned at a total depth of 3876 feet.

Burrel Outpost Test

Arrowhead Exploration Company is preparing to spud U.C.L.A. No. 22-8 located southeast of the Burrel Field production in the northwest quarter of Section 8-17s-19e. Miller and York have the contract to drill this 7000 foot test.

Mountain View

Sunray Mid-Continent Oil Company is drilling Morris No. 6, a 5700 foot Santa Margarita sand test, located in the southwest corner of the east-half of northeast quarter of Section 32-30s-29e. This is the first well to be drilled on this lease since January, 1936.

OTHER AREAS

Alaska

Standard Oil Company of Calif., Operator, and Richfield Oil Corp. completed Soldotna Creek Unit No. 4-4 flowing 750 b/d of 36 gravity clear oil from the Hemlock Zone. The well is located in the southwest quarter of Section 4-7n-9w approximately one mile southwest of Well No. 41-4, the discovery well of the Soldotna Creek Field. The completion was drilled to a total depth of 12,046 feet and cemented 7" casing at 11,040 feet.

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JENSEN JACKS

Montana

Cardinal Petroleum Company has staked a location for Jensen No. 1 in the northwest quarter of Section 18-34n-4e in Liberty County. The wildcat well will be a 2500 foot Madison test and is five miles south of Haystack Butte.

Northwest of the Cut Bank Field in Glacier County, Miles Jackson is drilling below 1000 feet on Tribal-Baker No. 1 located in the southeast quarter of Section 28-36n-6w. The well will test the Madison.

Davis Oil Company has staked location for a Carter County wildcat, Phelps No. 1, in the southeast quarter of Section 19-1n-60e. The well is scheduled to test the Red River at about 8800 feet and is ten miles west of the Red River production in the Repeat Field, which has one producing well.

New Mexico

Locations for four Dakota tests are being graded in northern New Mexico. Compass Exploration Co. will drill Federal No. 1-8, a 7300 foot Dakota test in the northwest quarter of Section 8-24n-7w in Rio Arriba County. The well is an easterly offset to production. In San Juan County, Southwest Production Company will drill Wright-State No. 1 in the northeast quarter of Section 16-27n-12w. Closest Dakota production is two miles northeast at the West Kutz Field. Delhi-Taylor Oil Company's test, Delhi-Florance-B No. 2, also a Dakota test, will be drilled in the southwest quarter of Section 30-28n-8w, and Delhi-Florance-B No. 1 is located in the southwest quarter of Section 9-28n-8w.

Oregon

Humble Oil & Refining Company is drilling below 8550 feet on Thomas Creek Unit Three No. 1. The 12,000 foot test is located on Section 18-36s-18e in Lake County a short distance north of the California border.

Utah

Shamrock Oil and Gas Company is drilling below 4450 feet on Rock House Unit No. 1 after a successful test of the Wasatch interval 4157-4138 feet resulted in a flow of 1369 mcf of gas per day rate on a 1½ hour test. Top of the Wasatch was logged at 3185 feet. This wildcat test is located in the southeast quarter of Section 10-11s-23e in Uintah County, six miles south of the Wasatch and Mesaverde production at Southman Canyon Field. The well will test the Mesaverde at about 7500 feet.

Trend Oil Company of Los Angeles has staked location for six wells in Grand County between the Bar-X and Westwater fields. Two tests will be drilled in Section 8-17s-24e, one each in Section 11 and 12 and two wells in Section 10-17s-24e. All will go to about 6200 feet to test the Entrada.

Texaco Inc. completed Navajo U No. 1 as a new discovery in the Ismay, good for 15 b/d of 40.2 gravity oil and 15 b/d salt water from the perforations 5460-5454, 5446-5435 feet and 5420-5426 feet. Top of the Ismay was logged at 5384 feet. Located in the northeast quarter of Section 32-40s-26e in San Juan County, the well was drilled to a total depth of 5726 feet and cemented 5½" casing at 5518 feet.

Washington

Sunshine Mining and Cascade Gas Company are drilling below 1000 feet on Oscar No. 1 located in the southeast quarter of Section 15-18n-12w in Grays Harbor County. The test is ½ mile southeast of the Sampson John Unit No. 1, completed in 1959 flowing 1500 mcf of gas.

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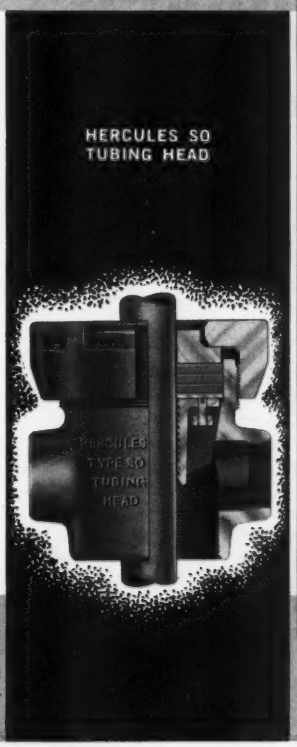

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New Steno: "Yes, sir, stock or pawn?"

Harry: "I started to write a drinking song once."

Larry: "What happened?"

Harry: "I could never get past the first two bars."

Stay-at-home wife: "Darling, how thoughtful. That hotel where you stayed during the convention sent me a blue nightgown."

The most believable golf story of the year appeared on the sports page of a Florida newspaper recently. It read: "At this point the gallery deserted the defending champion to watch Miss Blank, whose shorts were dropping on the green with astonishing regularity."

The drunk, on his way home, accidentally staggered into the zoo and ended up in front of the hippopotamus cage. "Don't look at me like that, honey," he yelled. "I can explain everything."

"How the Hell should I know!" shrieked Nick Nitwit into the phone. "Why don't you call the weather bureau?"

"Who was that on the phone?" his wife said.

"How should I know?" he snapped. "Just some damn fool wanted to know if the coast was clear."

Sam: "Did I tell you about the terrible nightmare I had last night?"

Bill: "No, what was it?"

Sam: "I dreamed I was Brigitte Bardot's baby and she put me on formula!"

A tea wagon is a push cart that broke into Society.

Judge: "Young man, you look very familiar. Have you ever been convicted by this Court?"

Witness: "No, your Honor!"

Judge: "Remember, you are under oath. Where have I seen you before?"

Witness: "I am the bartender in the saloon down the street."

"I'll have to have a raise, sir; there are three companies after me."

"What three?"

"Light, telephone and water!"

Wise Guy: (After entering a loaded bus): "Well, Noah, you finally got here. Is the Ark full?"

Driver: "Tis now, we needed one more monkey, and now we've got him."

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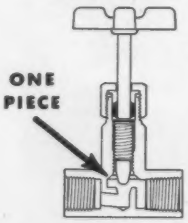

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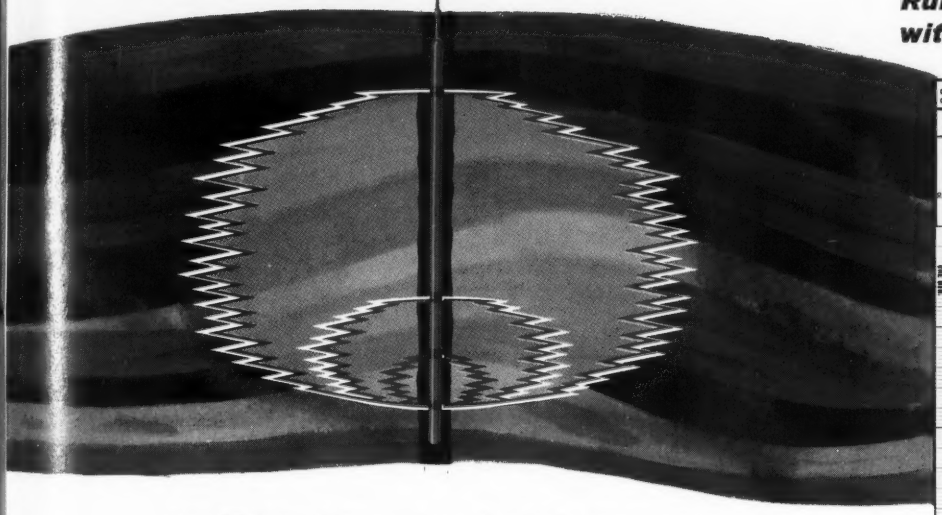

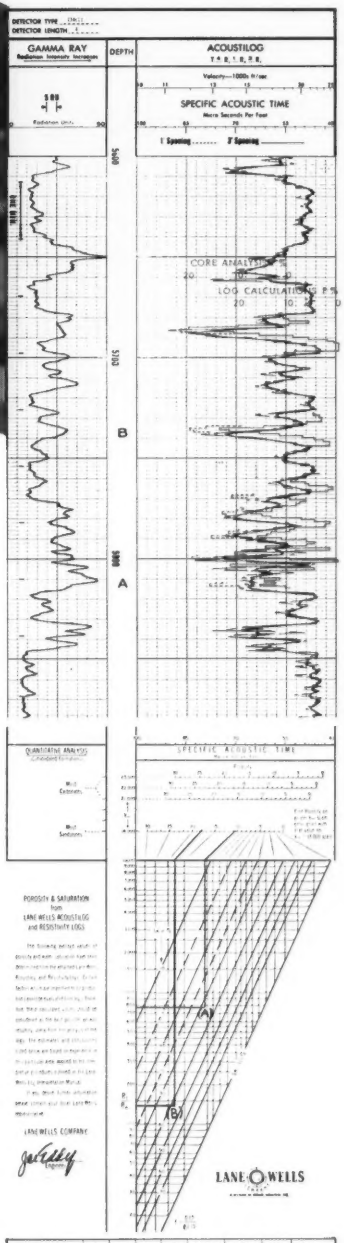

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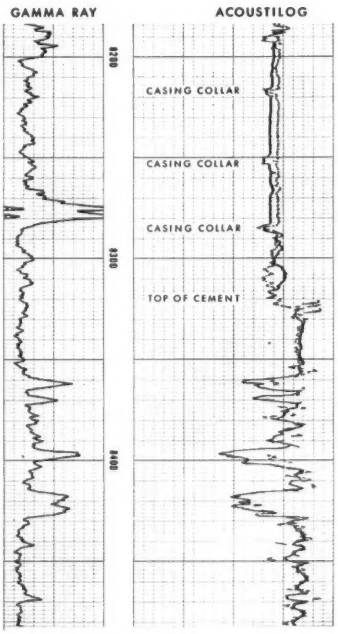

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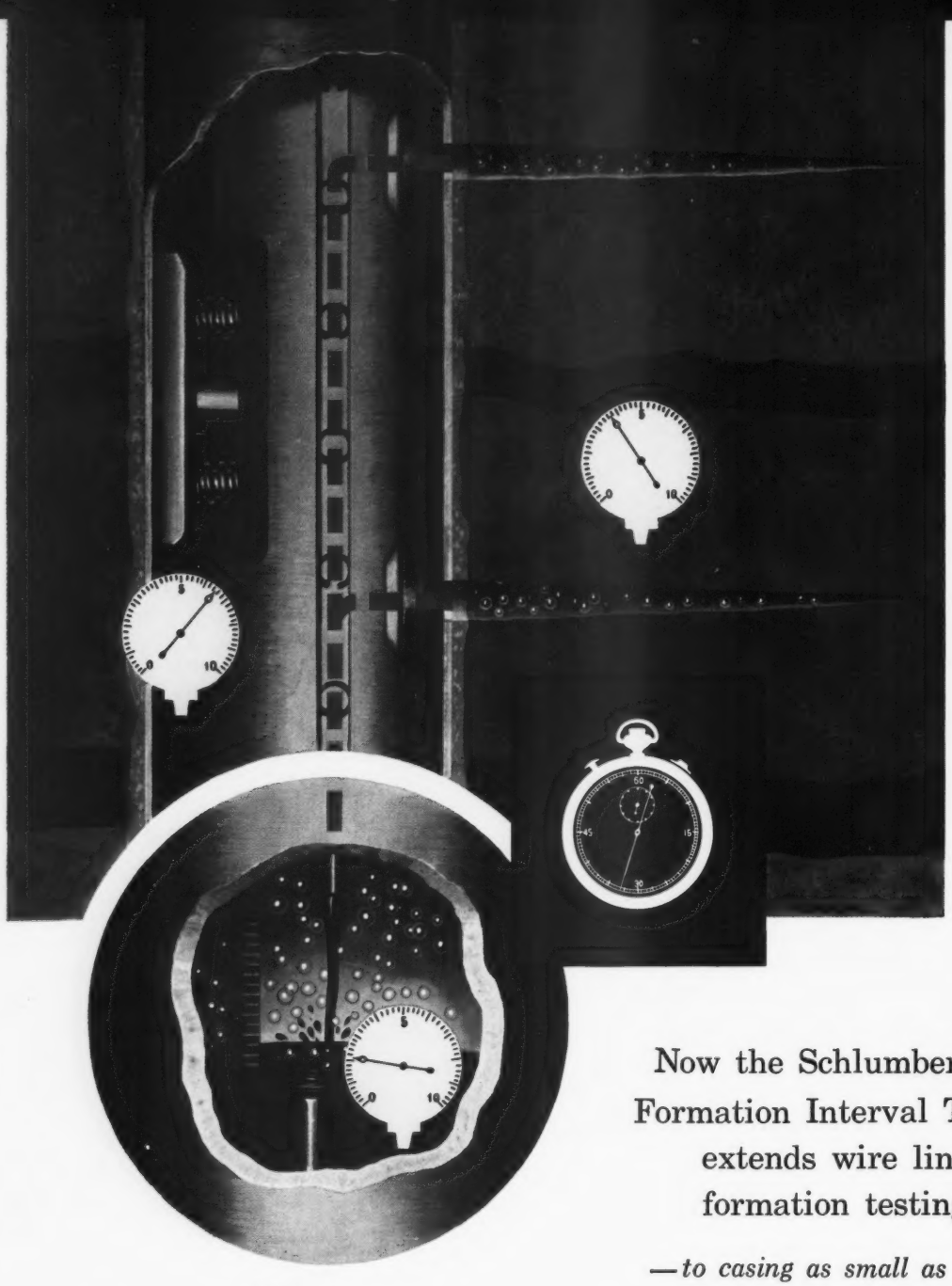

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